

STATE OF TENNESSEE DEPARTMENT OF HEALTH **ENVIRONMENTAL LABORATORIES**

TDH: Lab Services JRL Lab Services - Jackson Regional Lab Jackson, TN 38301 731-426-0686

TDH: Lab Services KRL Lab Services - Knoxville Regional Lab Knoxville, TN 37920 865-549-5201

TDH: Lab Services NCL Lab Services - Nashville Central Lab Nashville, TN 37243 615-262-6300

K00002955

Knoxville Regional Laboratory

Lab ID:

Sent To:

Greg Denton

TDEC-WPC

6th Floor, L & C Tower Annex

401 Church Street

Nashville, TN 37243-1534

Michael Atchley TDEC-WPC

Knoxville FO

3711 Middlebrook Pike

Knoxville, TN 37921

Sampling Agency: TDEC: Division of Water Pollution Control

Billing Code:

327.34-20

This is to certify that the following results were determined using good laboratory pratices and in accordance with federal or state approved methodologies.

Analytical Supervisor

K00002955001

Project Name:

TVA-Ash Spill

Sample Description:

Emory River mile 12.1

Sampler Project Name: TVA Ash Spill

Project Site No.:

Station No.:

EMORY012.1RO

Date/Time Collected: Sampler's Name:

10/06/2009 12:20

County:

Geoff Klein ROANE - 73

Sample Matrix:

Water

EFO:

Knoxville

Sampling Agency: **Billing Code:**

TDEC-WPC 327.34-20 TDEC-WPC

Send Report To: Agency Invoiced: **Priority Date:**

TDEC-WPC 10/16/2009

Date/Time Received:

10/06/2009 14:00

Received By:

E McCrary

Field Determinations

pH:

7.80

pH Units

Chlorine, residual:

Conductivity:

43

uMHO

Temperature: 17.38 **Dissolved Oxygen: 9.72**

mg/L

Other:

CFS Flow:

TEST: Digestion Metals	METHOD: EPA 200.2					
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Digestion Metals	10/07/2009				M Pattanayek	10/7/2009

TEST: ICP	METHOD: EPA 200.7						
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE	
Iron	200	μg/L	2.9	10	A Wilson	10/8/2009	

TEST: ICP-MS	ME	THOD: EPA 20	0.8	•		
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Aluminum	56	μg/L	6.4	10	M Pattanayek	10/8/2009
Antimony	0.42J	μg/L	0.33	1	M Pattanayek	10/8/2009
Arsenic	U	μg/L	0.93	5	M Pattanayek	10/8/2009
Barium	25	μg/L	2.5	5	M Pattanayek	10/8/2009
Beryllium	U	μg/L	0.11	1	M Pattanayek	10/8/2009
Cadmium	U	μg/L	0.41	1	M Pattanayek	10/8/2009
Chromium	U	μg/L	2.0	5	M Pattanayek	10/8/2009
Cobalt	0.25J	μg/L	0.04	1	M Pattanayek	10/8/2009
Copper	U	μg/L	0.38	1	M Pattanayek	10/8/2009
Lead	0.12J	μg/L	0.10	1	M Pattanayek	10/8/2009
Manganese	110	μg/L	0.42	1	M Pattanayek	10/8/2009
Nickel	0.88J	μg/L	0.25	1	M Pattanayek	10/8/2009
Selenium	U	μg/L	1.3	5	M Pattanayek	10/8/2009
Silver	0.074J	μg/L	0.03	0.25	M Pattanayek	10/8/2009
Thallium	0.10J	μg/L	0.03	1	M Pattanayek	10/8/2009
Vanadium	U	μg/L	3.4	5	M Pattanayek	10/8/2009
Zinc	U	μg/L	1.9	5	M Pattanayek	10/8/2009

K00002955001

Project Name:

TVA-Ash Spill

Sample Description:

Emory River mile 12.1

Sampler Project Name: TVA Ash Spill

Project Site No.:

Station No.:

EMORY012.1RO

Date/Time Collected:

10/06/2009 12:20

Sampler's Name:

Geoff Klein

County: Sample Matrix: ROANE - 73

EFO:

Water

Sampling Agency:

Knoxville

Billing Code:

TDEC-WPC 327.34-20

Send Report To: Agency Invoiced:

TDEC-WPC TDEC-WPC

Priority Date:

10/16/2009

Date/Time Received:

10/06/2009 14:00

Received By:

E McCrary

Field Determinations

pH:

7.80

pH Units

Chlorine, residual:

Conductivity:

43

uMHO

Temperature: **Dissolved Oxygen: 9.72**

17.38

mg/L

Other:

Flow:

CFS

TEST: Mercury	cury METHOD: EPA 245.1						
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE	
Mercury	U	μg/L	0.029	0.2	A Bass	10/13/2009	

J - Estimated value between MDL and MQL

MDL - Method Detection Limit

MQL - Method Quantitation Limit

K00002955002

Project Name:

TVA-Ash Spill

Sample Description:

Emory River mile 2.1

Sampler Project Name: TVA Ash Spill

Project Site No.:

Station No.:

EMORY002.1RO

Date/Time Collected:

10/06/2009 10:10

Sampler's Name: County:

Geoff Klein

Sample Matrix:

ROANE - 73

EFO:

Water

Sampling Agency:

Knoxville

Billing Code: Send Report To: TDEC-WPC 327.34-20 TDEC-WPC

Agency Invoiced: **Priority Date:**

TDEC-WPC 10/16/2009

Date/Time Received:

10/06/2009

14:00

Received By:

E McCrary

Field Determinations

pH:

7.96

pH Units

Chlorine, residual:

Conductivity:

62

uMHO

Temperature:

18.42 **Dissolved Oxygen: 9.13**

mg/L

Other:

Flow:

TEST: Digestion Metals	METHOD: EPA 200.2					
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Digestion Metals	10/07/2009				M Pattanayek	10/7/2009

TEST: ICP METHOD: EPA 200.7						
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Iron	310	μg/L	2.9	10	A Wilson	10/8/2009

TEST: ICP-MS	ME	THOD: EPA 20	0.8			
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Aluminum	370	μg/L	6.4	10	M Pattanayek	10/8/2009
Antimony	· U	μg/L	0.33	1	M Pattanayek	10/8/2009
Arsenic	2.8J	μg/L	0.93	5	M Pattanayek	10/8/2009
Barium	34	μg/L	2.5	5	M Pattanayek	10/8/2009
Beryllium	U	μg/L	0.11	1	M Pattanayek	10/8/2009
Cadmium	U	μg/L	0.41	. 1	M Pattanayek	10/8/2009
Chromium	U	μg/L	2.0	5	M Pattanayek	10/8/2009
Cobalt	0.34J	μg/L	0.04	1	M Pattanayek	10/8/2009
Copper	1.6	μg/L	0.38	1	M Pattanayek	10/8/2009
Lead	0.57J	μg/L	0.10	1	M Pattanayek	10/8/2009
Manganese	49	μg/L	0.42	1	M Pattanayek	10/8/2009
Nickel	1.3	μg/L	0.25	1	M Pattanayek	10/8/2009
Selenium	U	μg/L	1.3	5	M Pattanayek	10/8/2009
Silver	U	μg/L	0.03	0.25	M Pattanayek	10/8/2009
Thallium	0.084J	μg/L	0.03	1	M Pattanayek	10/8/2009
Vanadium	U	μg/L	3.4	5	M Pattanayek	10/8/2009
Zinc	2.0J	μg/L	1.9	5	M Pattanayek	10/8/2009

K00002955002

Project Name:

TVA-Ash Spill

Sample Description:

Emory River mile 2.1

Project Site No.:

Sampler Project Name: TVA Ash Spill

Station No.:

EMORY002.1RO

Date/Time Collected:

10/06/2009 10:10

Sampler's Name: County:

Geoff Klein

Sample Matrix:

ROANE - 73 Water

EFO: Sampling Agency: Knoxville TDEC-WPC 327.34-20

Billing Code: Send Report To: Agency Invoiced:

TDEC-WPC TDEC-WPC 10/16/2009

Priority Date: Date/Time Received:

10/06/2009 14:00

Received By:

E McCrary

Field Determinations

pH:

7.96

pH Units

Chlorine, residual:

Conductivity:

62

uMHO

Temperature:

18.42

Dissolved Oxygen: 9.13

Other:

Flow:

CFS

mg/L

TEST: Mercury	Mercury METHOD: EPA 245.1					
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Mercury	U	μg/L	0.029	0.2	A Bass	10/13/2009

J - Estimated value between MDL and MQL

MDL - Method Detection Limit

MQL - Method Quantitation Limit

K00002955003

Project Name:

TVA-Ash Spill

Sample Description:

Emory River mile 1.9 at underwater weir

Sampler Project Name: TVA Ash Spill

Project Site No.:

2B

Station No.:

Date/Time Collected:

EMORY001.9RO 10/06/2009 10:30

Sampler's Name:

Geoff Klein

County:

ROANE - 73

Sample Matrix:

EFO:

Water Knoxville

Sampling Agency:

TDEC-WPC

Billing Code: Send Report To: Agency Invoiced: 327.34-20 TDEC-WPC TDEC-WPC

Priority Date: Date/Time Received: 10/16/2009 14:00

10/06/2009

Received By:

E McCrary

Field Determinations

pH:

7.62

pH Units

uMHO

Chlorine, residual:

Conductivity: Temperature: 65

18.29

mg/L

Dissolved Oxygen: 9.13

Other:

Flow:

TEST: Digestion Metals	METHOD: EPA 200.2						
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE	
Digestion Metals	10/07/2009				M Pattanayek	10/7/2009	

TEST: ICP	METHOD: EPA 200.7						
ANALYTE	RESULT UNITS MDL MQL ANALYZED BY: DA						
Iron	400	μg/L	2.9	10	A Wilson	10/8/2009	

TEST: ICP-MS	MET	THOD: EPA 20	0.8			
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Aluminum	420	μg/L	6.4	10	M Pattanayek	10/8/2009
Antimony	U	μg/L	0.33	1	M Pattanayek	10/8/2009
Arsenic	5.5	μg/L	0.93	5	M Pattanayek	10/8/2009
Barium	42	μg/L	2.5	5	M Pattanayek	10/8/2009
Beryllium	0.12J	μg/L	0.11	1	M Pattanayek	10/8/2009
Cadmium	U	μg/L	0.41	1	M Pattanayek	10/8/2009
Chromium	U	μg/L	2.0	5	M Pattanayek	10/8/2009
Cobalt	0.50J	μg/L	0.04	1	M Pattanayek	10/8/2009
Copper	3.3	μg/L	0.38	1	M Pattanayek	10/8/2009
Lead	0.92J	μg/L	0.10	1	M Pattanayek	10/8/2009
Manganese	51	μg/L	0.42	1	M Pattanayek	10/8/2009
Nickel	1.5	μg/L	0.25	1	M Pattanayek	10/8/2009
Selenium	U	μg/L	1.3	5	M Pattanayek	10/8/2009
Silver	U	μg/L	0.03	0.25	M Pattanayek	10/8/2009
Thallium	0.10J	μg/L	0.03	1	M Pattanayek	10/8/2009
Vanadium	4.4J	μg/L	3.4	5	M Pattanayek	10/8/2009
Zinc	3.8J	μg/L	1.9	5	M Pattanayek	10/8/2009

K00002955003

Project Name:

TVA-Ash Spill

Sample Description:

Emory River mile 1.9 at underwater weir

10:30

Sampler Project Name: TVA Ash Spill

Project Site No.:

Station No.:

EMORY001.9RO

Date/Time Collected:

10/06/2009 Geoff Klein

Sampler's Name: County:

Sample Matrix:

ROANE - 73

EFO:

Water

Sampling Agency: **Billing Code:**

Knoxville TDEC-WPC 327.34-20

Send Report To: **Agency Invoiced:**

TDEC-WPC TDEC-WPC

Priority Date: Date/Time Received: 10/16/2009

10/06/2009

14:00

Received By:

E McCrary

METHOD: EPA 245.1

Field Determinations

Dissolved Oxygen: 9.13

Chlorine, residual:

Conductivity:

Temperature:

pH:

Other:

Flow:

7.62

65

18.29

pH Units

uMHO

mg/L

CFS

TEST: Mercury MQL MDL **ANALYZED BY:** DATE **RESULT** UNITS **ANALYTE**

U 0.2 μg/L 0.029 A Bass 10/13/2009 Mercury

J - Estimated value between MDL and MQL

MDL - Method Detection Limit

MQL - Method Quantitation Limit

K00002955004

Project Name:

TVA-Ash Spill

Sample Description:

Emory River mile 1.9 at underwater weir

Sampler Project Name: TVA Ash Spill

Project Site No.:

2B FD

Station No.: Date/Time Collected: EMORY001.9RO

Sampler's Name:

10/06/2009 10:30

County:

Geoff Klein ROANE - 73

Sample Matrix: EFO:

Water

Sampling Agency:

Knoxville

Billing Code: Send Report To: TDEC-WPC 327.34-20 TDEC-WPC

Agency Invoiced: **Priority Date:**

TDEC-WPC 10/16/2009

Date/Time Received:

10/06/2009 14:00

Received By:

E McCrary

Field Determinations

pH:

7.62

pH Units

Chlorine, residual:

Conductivity:

65

uMHO

mg/L

Temperature: 18.29

Dissolved Oxygen: 9.13

Other:

Flow:

TEST: Digestion Metals	METHOD: EPA 200.2						
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE	
Digestion Metals	10/07/2009				M Pattanayek	10/7/2009	

TEST: ICP METHOD: EPA 200.7						
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Iron	330	μg/L	2.9	10	A Wilson	10/8/2009

TEST: ICP-MS	ME ⁻	THOD: EPA 20	0.8			
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Aluminum	320	μg/L	6.4	10	M Pattanayek	10/8/2009
Antimony	U .	μg/L	0.33	1	M Pattanayek	10/8/2009
Arsenic	5.1	μg/L	0.93	5	M Pattanayek	10/8/2009
Barium	40	μg/L	2.5	5	M Pattanayek	10/8/2009
Beryllium	U	μg/L	0.11	1	M Pattanayek	10/8/2009
Cadmium	U	μg/L	0.41	1	M Pattanayek	10/8/2009
Chromium	. U	μg/L	2.0	5	M Pattanayek	10/8/2009
Cobalt	0.42J	μg/L	0.04	1	M Pattanayek	10/8/2009
Copper	3.1	μg/L	0.38	1	M Pattanayek	10/8/2009
Lead	0.74J	μg/L	0.10	1	M Pattanayek	10/8/2009
Manganese	53	μg/L	0.42	1	M Pattanayek	10/8/2009
Nickel	1.4	μg/L	0.25	1	M Pattanayek	10/8/2009
Selenium	U	μg/L	1.3	5	M Pattanayek	10/8/2009
Silver	υ	μg/L	0.03	0.25	M Pattanayek	10/8/2009
Thallium	0.088J	μg/L	0.03	1	M Pattanayek	10/8/2009
Vanadium	3.7J	μg/L	3.4	5	M Pattanayek	10/8/2009
Zinc	3. 3 J	μg/L	1.9	5	M Pattanayek	10/8/2009

K00002955004

Project Name:

TVA-Ash Spill

Sample Description:

Emory River mile 1.9 at underwater weir

Sampler Project Name: TVA Ash Spill

Project Site No.:

2B FD

Station No.:

EMORY001.9RO

Date/Time Collected:

10/06/2009 10:30

Sampler's Name:

Geoff Klein

County:

ROANE - 73

Sample Matrix: EFO:

Water

Sampling Agency:

Knoxville

Billing Code:

TDEC-WPC 327.34-20

Send Report To: Agency Invoiced: TDEC-WPC TDEC-WPC

Priority Date:

10/16/2009

Date/Time Received:

10/06/2009 14:00

Received By:

E McCrary

Field Determinations

pH:

7.62

pH Units

Chlorine, residual:

Conductivity:

65

uMHO

Temperature:

18.29

Dissolved Oxygen: 9.13

mg/L

Other:

Flow:

CFS

TEST: Mercury METHOD: EPA 245.1						
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Mercury	U	μg/L	0.029	0.2	A Bass	10/13/2009

J - Estimated value between MDL and MQL

MDL - Method Detection Limit

MQL - Method Quantitation Limit

K00002955005

Project Name:

TVA-Ash Spill

Sample Description:

Emory River mile 1.9 at underwater weir

Sampler Project Name: TVA Ash Spill

Project Site No.:

2B FB

Station No.:

EMORY001.9RO

Date/Time Collected:

10/06/2009 10:30

Sampler's Name: County:

Geoff Klein

Sample Matrix:

ROANE - 73 Water

EFO: Sampling Agency: Knoxville

Billing Code: Send Report To: TDEC-WPC 327.34-20 TDEC-WPC

Agency Invoiced: **Priority Date:**

TDEC-WPC 10/16/2009

Date/Time Received:

10/06/2009 14:00

Received By:

E McCrary

Field Determinations

:Hq

Chlorine, residual: Conductivity: Temperature: Dissolved Oxygen:

Other:

Flow:

TEST: Digestion Metals	METHOD: EPA 200.2					
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Digestion Metals	10/07/2009				M Pattanayek	10/7/2009

TEST: ICP	MET	METHOD: EPA 200.7				
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Iron	U	μg/L	2.9	10	A Wilson	10/8/2009

TEST: ICP-MS	ME:	THOD: EPA 20	0.8			
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Aluminum	12	μg/L	6.4	10	M Pattanayek	10/8/2009
Antimony	U	μġ/L	0.33	1 -	M Pattanayek	10/8/2009
Arsenic	U	μg/L	0.93	5	M Pattanayek	10/8/2009
Barium	U	μg/L	2.5	5	M Pattanayek	10/8/2009
Beryllium	U	μg/L	0.11	1	M Pattanayek	10/8/2009
Cadmium	U	μg/L	0.41	1	M Pattanayek	10/8/2009
Chromium	U	μg/L	2.0	5	M Pattanayek	10/8/2009
Cobalt	0.10J	μg/L	0.04	1	M Pattanayek	10/8/2009
Copper	U	μg/L	0.38	1	M Pattanayek	10/8/2009
Lead	U	μg/L	0.10	1	M Pattanayek	10/8/2009
Manganese	U	μg/L	0.42	1	M Pattanayek	10/8/2009
Nickel	U	μg/L	0.25	1	M Pattanayek	10/8/2009
Selenium	U	μg/L	1.3	5	M Pattanayek	10/8/2009
Silver	U	μg/L	0.03	0.25	M Pattanayek	10/8/2009
Thallium	Ū	μg/L	0.03	1	M Pattanayek	10/8/2009
Vanadium	Ū	- μg/L	3.4	5	M Pattanayek	10/8/2009
Zinc	Ü	μg/L	1.9	5	M Pattanayek	10/8/2009

K00002955005

Project Name:

TVA-Ash Spill

Sample Description:

Emory River mile 1.9 at underwater weir

Project Site No.:

Sampler Project Name: TVA Ash Spill

2B FB

Station No.:

EMORY001.9RO

Date/Time Collected:

10/06/2009 10:30

Sampler's Name:

Geoff Klein

County: Sample Matrix: ROANE - 73

EFO:

Water

Sampling Agency:

Knoxville TDEC-WPC

Billing Code: Send Report To: 327.34-20 TDEC-WPC TDEC-WPC

Agency Invoiced: **Priority Date:**

10/16/2009

Date/Time Received:

10/06/2009 14:00

Received By:

E McCrary

Field Determinations

pH:

Chlorine, residual:

Conductivity: Temperature:

Dissolved Oxygen:

Other:

Flow:

CFS

TEST: Mercury	METHOD: EPA 245.1						
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE	
Mercury	U	μg/L	0.029	0.2	A Bass	10/13/2009	

J - Estimated value between MDL and MQL

MDL - Method Detection Limit

MQL - Method Quantitation Limit

K00002955006

Project Name:

TVA-Ash Spill

Sample Description: Sampler Project Name: TVA Ash Spill

Emory River mile 1.7

Project Site No.:

Station No.:

EMORY001.7RO

Date/Time Collected:

10/06/2009 10:45

Sampler's Name: County:

Geoff Klein ROANE - 73

Sample Matrix:

EFO:

Water

Sampling Agency:

Knoxville

Billing Code: Send Report To: Agency Invoiced: TDEC-WPC 327.34-20 TDEC-WPC

Priority Date:

TDEC-WPC 10/16/2009

Date/Time Received:

10/06/2009 14:00

Received By:

E McCrary

Field Determinations

pH:

7.42

pH Units

Chlorine, residual:

Conductivity:

87 18.44 uMHO

Temperature:

Dissolved Oxygen: 9.07

mg/L

Other:

Flow:

TEST: Digestion Metals METHOD: EPA 200.2						
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Digestion Metals	10/07/2009				M Pattanayek	10/7/2009

TEST: ICP	METHOD: EPA 200.7						
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE	
Iron	290	μg/L	2.9	10	A Wilson	10/8/2009	

TEST: ICP-MS	WE.	THOD: EPA 200	0.8			
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Aluminum	230	μg/L	6.4	10	M Pattanayek	10/8/2009
Antimony	U	μg/L	0.33	1	M Pattanayek	10/8/2009
Arsenic	3.4J	μg/L	0.93	5	M Pattanayek	10/8/2009
Barium	35	μg/L	2.5	5	M Pattanayek	10/8/2009
Beryllium	U	μg/L	0.11	1	M Pattanayek	10/8/2009
Cadmium	U	μg/L	0.41	1	M Pattanayek	10/8/2009
Chromium .	U	μg/L	2.0	5	M Pattanayek	10/8/2009
Cobalt	0.32J	μg/L	0.04	1	M Pattanayek	10/8/2009
Copper	1.6	μg/L	0.38	1	M Pattanayek	10/8/2009
Lead	0.51J	μg/L	0.10	1	M Pattanayek	10/8/2009
Manganese	56	μg/L	0.42	1	M Pattanayek	10/8/2009
Nickel	1.1	μg/L	0.25	1	M Pattanayek	10/8/2009
Selenium	U	μg/L	1.3	5	M Pattanayek	10/8/2009
Silver	U	μg/L	0.03	0.25	M Pattanayek	10/8/2009
Thallium	0.060J	μg/L	0.03	1	M Pattanayek	10/8/2009
Vanadium	U	μg/L	3.4	5	M Pattanayek	10/8/2009
Zinc	2.2J	μg/L	1.9	5	M Pattanayek	10/8/2009

K00002955006

Project Name:

TVA-Ash Spill

Sample Description:

Emory River mile 1.7

Sampler Project Name: TVA Ash Spill

Project Site No.:

Station No.:

Date/Time Collected:

EMORY001.7RO

Sampler's Name:

10/06/2009 10:45 Geoff Klein

County:

ROANE - 73

Sample Matrix:

EFO:

Water

Sampling Agency:

Knoxville

Billing Code: Send Report To: TDEC-WPC 327.34-20 TDEC-WPC

Agency Invoiced: **Priority Date:**

TDEC-WPC

Date/Time Received:

10/16/2009

Received By:

E McCrary

10/06/2009

14:00

Field Determinations

pH:

7.42

pH Units

Chlorine, residual:

Conductivity:

87

uMHO

Temperature:

18.44

Dissolved Oxygen: 9.07

mg/L

Other:

Flow:

CFS

TEST: Mercury	METHOD: EPA 245.1						
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE	
Mercury	U	μg/L	0.029	0.2	A Bass	10/13/2009	

J - Estimated value between MDL and MQL

MDL - Method Detection Limit

MQL - Method Quantitation Limit

K00002955007

Project Name:

TVA-Ash Spill

Sample Description: Sampler Project Name: TVA Ash Spill

Emory River mile 0.1

Project Site No.:

Station No.:

EMORY000.1RO

Date/Time Collected:

10/06/2009 10:58

Sampler's Name: County:

Geoff Klein ROANE - 73

Sample Matrix:

Water

EFO:

Knoxville

Sampling Agency: Billing Code:

TDEC-WPC

Send Report To: Agency Invoiced: 327.34-20 TDEC-WPC TDEC-WPC

Priority Date:

10/16/2009

Date/Time Received:

10/06/2009 14:00

Received By:

E McCrary

Field Determinations

pH:

7.42

pH Units

Chlorine, residual:

Conductivity:

109

uMHO

18.66 Temperature: Dissolved Oxygen: 8.14

Other:

Flow:

CFS

mg/L

TEST: Digestion Metals	METHOD: EPA 200.2						
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE	
Digestion Metals	10/07/2009				M Pattanayek	10/7/2009	

TEST: ICP METHOD: EPA 200.7						
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Iron	130	μg/L	2.9	10	A Wilson	10/8/2009

TEST: ICP-MS	ME.	THOD: EPA 20	0.8			
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Aluminum	120	μg/L	6.4	10	M Pattanayek	10/8/2009
Antimony	U	μg/L	0.33	1	M Pattanayek	10/8/2009
Arsenic	1.9J	μg/L	0.93	5	M Pattanayek	10/8/2009
Barium	35	μg/L	2.5	5	M Pattanayek	10/8/2009
Beryllium	U	μg/L	0.11	1	M Pattanayek	10/8/2009
Cadmium	U	μg/L	0.41	1	M Pattanayek	10/8/2009
Chromium	U	μg/L	2.0	5	M Pattanayek	10/8/2009
Cobalt	0.20J	μg/L	0.04	1	M Pattanayek	10/8/2009
Copper	1.5	μg/L	0.38	1	M Pattanayek	10/8/2009
Lead	0.25J	μg/L	0.10	1	M Pattanayek	10/8/2009
Manganese	41	μg/L	0.42	1	M Pattanayek	10/8/2009
Nickel	0.95J	μg/L	0.25	1	M Pattanayek	10/8/2009
Selenium	U	μg/L	1.3	5	M Pattanayek	10/8/2009
Silver	U	μg/L	0.03	0.25	M Pattanayek	10/8/2009
Thallium	U	μg/L	0.03	1	M Pattanayek	10/8/2009
Vanadium	U	μg/L	3.4	5	M Pattanayek	10/8/2009
Zinc	2.3J	μg/L	1.9	5	M Pattanayek	10/8/2009

K00002955007

Project Name:

TVA-Ash Spill

Sample Description:

Sampler Project Name: TVA Ash Spill

Emory River mile 0.1

Project Site No.:

Station No.:

Date/Time Collected:

EMORY000.1RO 10/06/2009 10:58

Sampler's Name:

Geoff Klein

County:

ROANE - 73

Sample Matrix:

Water

EFO:

Knoxville

Sampling Agency:

TDEC-WPC

Billing Code: Send Report To: 327.34-20 TDEC-WPC

Agency Invoiced: **Priority Date:**

TDEC-WPC 10/16/2009

Date/Time Received:

10/06/2009 14:00

Received By:

E McCrary

Field Determinations

pH:

7.42

pH Units

Chlorine, residual:

Conductivity:

109 18.66 uMHO

Temperature:

Dissolved Oxygen: 8.14

mg/L

Other:

Flow:

CFS

TEST: Mercury METHOD: EPA 245.1						
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Mercury	U	μg/L	0.029	0.2	A Bass	10/13/2009

J - Estimated value between MDL and MQL

MDL - Method Detection Limit

MQL - Method Quantitation Limit

K00002955008

Project Name: Sample Description: TVA-Ash Spill Clinch River mile 2.3

Sampler Project Name: TVA Ash Spill

Project Site No.: Station No.:

CLINC002.3RO Date/Time Collected:

Sampler's Name:

10/06/2009 11:15 Geoff Klein

County: Sample Matrix:

ROANE - 73 Water

EFO: Sampling Agency: Billing Code:

Knoxville TDEC-WPC 327.34-20 TDEC-WPC

Send Report To: Agency Invoiced: **Priority Date:**

TDEC-WPC 10/16/2009

Date/Time Received:

10/06/2009 14:00

Received By:

E McCrary

Field Determinations

pH:

Chlorine, residual:

Conductivity:

213

7.62

uMHO

pH Units

Temperature:

18.76 Dissolved Oxygen: 7.95

mg/L

Other:

Flow:

TEST: Digestion Metals METHOD: EPA 200.2							
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE	
Digestion Metals	10/07/2009				M Pattanayek	10/7/2009	

TEST: ICP	ME	THOD: EPA 20	0.7			
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Iron	160	μg/L	2.9	10	A Wilson	10/8/2009

TEST: ICP-MS	ME	THOD: EPA 200	0.8			
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Aluminum	130	μg/L	6.4	10	M Pattanayek	10/8/2009
Antimony	U	μg/L	0.33	1	M Pattanayek	10/8/2009
Arsenic	1.4J	μg/L	0.93	5	M Pattanayek	10/8/2009
Barium	34	μg/L	2.5	5	M Pattanayek	10/8/2009
Beryllium	U	μg/L	0.11	1	M Pattanayek	10/8/2009
Cadmium	U	μg/L	0.41	1	M Pattanayek	10/8/2009
Chromium	· U	μg/L	2.0	5	M Pattanayek	10/8/2009
Cobalt	0.20J	μg/L	0.04	1	M Pattanayek	10/8/2009
Copper	2.0	μg/L	0.38	1	M Pattanayek	10/8/2009
Lead	0.31J	μg/L	0.10	-1	M Pattanayek	10/8/2009
Manganese	35	μg/L	0.42	1	M Pattanayek	10/8/2009
Nickel	0.96J	μg/L	0.25	1	M Pattanayek	10/8/2009
Selenium	U	μg/L	1.3	5	M Pattanayek	10/8/2009
Silver	U	μg/L	0.03	0.25	M Pattanayek	10/8/2009
Thallium	0.31J	μg/L	0.03	1	M Pattanayek	10/8/2009
Vanadium	U	μg/L	3.4	5	M Pattanayek	10/8/2009
Zinc	2.6J	μg/L	1.9	5	M Pattanayek	10/8/2009

K00002955008

Project Name:

TVA-Ash Spill

Sample Description:

Clinch River mile 2.3

Sampler Project N

Sampler Project Name: TVA Ash Spill

Project Site No.:

5

Station No.: CLINC002.3RO

Date/Time Collected: Sampler's Name:

10/06/2009 11:15

County:

Geoff Klein ROANE - 73

Sample Matrix:

Water

EFO: Sampling Agency:

Knoxville
TDEC-WPC

Billing Code: Send Report To: Agency Invoiced: 327.34-20 TDEC-WPC TDEC-WPC

Priority Date:

10/16/2009

Date/Time Received:

10/06/2009

14:00

Received By:

E McCrary

Field Determinations

Dissolved Oxygen: 7.95

pH:

7.62

pH Units

Chlorine, residual:

Conductivity: Temperature:

213

18.76

uMHO mg/L

Other:

Flow:

CFS

TEST: Mercury METHOD: EPA 245.1						
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Mercury	U	μg/L	0.029	0.2	A Bass	10/13/2009

J - Estimated value between MDL and MQL

MDL - Method Detection Limit MQL - Method Quantitation Limit

K00002955009

Project Name:

TVA-Ash Spill

Sample Description:

Clinch River TVA discharge point

Sampler Project Name: TVA Ash Spill

Project Site No.:

5A

Station No.:

KingAshOutF2

Date/Time Collected:

10/06/2009 11:24

Sampler's Name: County:

Geoff Klein ROANE - 73

Sample Matrix:

EFO:

Water

Knoxville

Sampling Agency: **Billing Code:**

TDEC-WPC

Send Report To:

327.34-20 TDEC-WPC

Agency Invoiced: **Priority Date:**

TDEC-WPC

Date/Time Received:

10/16/2009

10/06/2009

14:00

Received By:

E McCrary

Field Determinations

pH:

7.57

pH Units

Chlorine, residual:

Conductivity:

84

uMHO

21.40 Temperature:

Dissolved Oxygen: 9.23

mg/L

Other:

Flow:

TEST: Digestion Metals	METHOD: EPA 200.2						
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE	
Digestion Metals	10/07/2009				M Pattanayek	10/7/2009	

TEST: ICP METHOD: EPA 200.7							
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE	
Iron	330	μg/L	2.9	10	A Wilson	10/8/2009	

TEST: ICP-MS	ME ⁻	THOD: EPA 20	0.8			
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Aluminum	320	μg/L	6.4	10	M Pattanayek	10/8/2009
Antimony	0.52J	μg/L	0.33	1	M Pattanayek	10/8/2009
Arsenic	5.8	μg/L	0.93	5	M Pattanayek	10/8/2009
Barium	43	μg/L	2.5	5	M Pattanayek	10/8/2009
Beryllium	U	μg/L	0.11	1	M Pattanayek	10/8/2009
Cadmium	U	μg/L	0.41	1	M Pattanayek	10/8/2009
Chromium	U	μg/L	2.0	5	M Pattanayek	10/8/2009
Cobalt	0.39J	μg/L	0.04	1	M Pattanayek	10/8/2009
Copper	5.2	μg/L	0.38	1	M Pattanayek	10/8/2009
Lead	0.70J	μg/L	0.10	1	M Pattanayek	10/8/2009
Manganese	62	μg/L	0.42	1	M Pattanayek	10/8/2009
Nickel	1.3	μg/L	0.25	1	M Pattanayek	10/8/2009
Selenium	U	μg/L	1.3	5	M Pattanayek	10/8/2009
Silver	U	μg/L	0.03	0.25	M Pattanayek	10/8/2009
Thallium	0.11J	μg/L	0.03	1	M Pattanayek	10/8/2009
Vanadium	4.0J	μg/L	3.4	5	M Pattanayek	10/8/2009
Zinc	4.3J	μg/L	1.9	5	M Pattanayek	10/8/2009

K00002955009

Project Name:

TVA-Ash Spill

Sample Description:

Clinch River TVA discharge point

Sampler Project Name: TVA Ash Spill

Project Site No.:

Station No.:

KingAshOutF2

Date/Time Collected:

Sampler's Name:

10/06/2009 11:24

County:

Geoff Klein

Sample Matrix:

ROANE - 73

EFO:

Water

Sampling Agency:

Knoxville

Billing Code:

TDEC-WPC 327.34-20

Send Report To:

TDEC-WPC

Agency Invoiced: **Priority Date:**

TDEC-WPC 10/16/2009

Date/Time Received:

10/06/2009 14:00

Received By:

E McCrary

Field Determinations

pH:

7.57

pH Units

Chlorine, residual:

Conductivity:

84

uMHO

Temperature:

21.40 Dissolved Oxygen: 9.23

mg/L

Other:

Flow:

CFS

TEST: Mercury METHOD: EPA 245.1						
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Mercury	U	μg/L	0.029	0.2	A Bass	10/13/2009

J - Estimated value between MDL and MQL

MDL - Method Detection Limit

MQL - Method Quantitation Limit

K00002955010

Project Name:

TVA-Ash Spill

Sample Description:

Clinch River mile 4.5 near Sugar Grove Valley R Chlorine, residual:

Project Site No.:

Sampler Project Name: TVA Ash Spill

Station No.:

CLINC004.5RO

Date/Time Collected:

10/06/2009 11:40

Sampler's Name: County:

Geoff Klein

Sample Matrix:

ROANE - 73

EFO:

Water Knoxville

Sampling Agency: Billing Code:

TDEC-WPC 327.34-20 **TDEC-WPC**

Send Report To: Agency Invoiced: **Priority Date:**

TDEC-WPC 10/16/2009

Date/Time Received:

10/06/2009

14:00

Received By:

E McCrary

Field Determinations

pH:

7.47

pH Units

Conductivity:

253

uMHO

18.11 Temperature: Dissolved Oxygen: 763

mg/L

Other: Flow:

TEST: Digestion Metals	METHOD: EPA 200.2						
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE	
Digestion Metals	10/07/2009				M Pattanayek	10/7/2009	

TEST: ICP						
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Iron	110	μg/L	2.9	10	A Wilson	10/8/2009

TEST: ICP-MS	ME	THOD: EPA 20	0.8			
ANALYTE	RESULT	UNITS	MDL	MQL.	ANALYZED BY:	DATE
Aluminum	77	μg/L	6.4	10	M Pattanayek	10/8/2009
Antimony	Ü	μg/L	0.33	1	M Pattanayek	10/8/2009
Arsenic	U	μg/L	0.93	5	M Pattanayek	10/8/2009
Barium	31	μg/L	2.5	5	M Pattanayek	10/8/2009
Beryllium	U	μg/L	0.11	1	M Pattanayek	10/8/2009
Cadmium	U ·	μg/L	0.41	1	M Pattanayek	10/8/2009
Chromium	U	μg/L	2.0	-5	M Pattanayek	10/8/2009
Cobalt	0.18J	μg/L	0.04	1	M Pattanayek	10/8/2009
Copper	1.8	μg/L	0.38	1	M Pattanayek	10/8/2009
Lead	0.27J	μg/L	0.10	1	M Pattanayek	10/8/2009
Manganese	37	μg/L	0.42	1	M Pattanayek	10/8/2009
Nickel	0.90J	μg/L	0.25	1	M Pattanayek	10/8/2009
Selenium	U	μg/L	1.3	5	M Pattanayek	10/8/2009
Silver	· U	μg/L	0.03	0.25	M Pattanayek	10/8/2009
Thallium	Ū	μg/L	0.03	1	M Pattanayek	10/8/2009
Vanadium	Ū	μg/L	3.4	5	M Pattanayek	10/8/2009
Zinc	3.1J	μg/L	1.9	5	M Pattanayek	10/8/2009

K00002955010

Project Name:

TVA-Ash Spill

Sample Description:

Sampler Project Name: TVA Ash Spill

Project Site No.: Station No.:

CLINC004.5RO

Date/Time Collected:

10/06/2009 11:40

Sampler's Name: County:

Geoff Klein

Sample Matrix:

ROANE - 73 Water

EFO: Sampling Agency: **Billing Code:**

Knoxville TDEC-WPC 327.34-20

Send Report To: **Agency Invoiced: Priority Date:**

TDEC-WPC TDEC-WPC 10/16/2009

Date/Time Received:

10/06/2009 14:00

Received By:

TEST: Mercury

ANALYTE

Mercury

E McCrary

METHOD: EPA 245.1

RESULT 0.04J

MDL MQL UNITS 0.2 0.029 μg/L

ANALYZED BY: DATE A Bass 10/13/2009

J - Estimated value between MDL and MQL

MDL - Method Detection Limit MQL - Method Quantitation Limit

U - Undetected

Field Determinations pH:

7.47

pH Units

Clinch River mile 4.5 near Sugar Grove Valley R Chlorine, residual:

Conductivity:

253 18.11 **uMHO**

Temperature: Dissolved Oxygen: 763

mg/L

Other:

Flow:



STATE OF TENNESSEE DEPARTMENT OF HEALTH **ENVIRONMENTAL LABORATORIES**

TDH: Lab Services JRL Lab Services - Jackson Regional Lab Jackson, TN 38301 731-426-0686

TDH: Lab Services KRL Lab Services - Knoxville Regional Lab Knoxville, TN 37920 865-549-5201

TDH: Lab Services NCL Lab Services - Nashville Central Lab Nashville, TN 37243 615-262-6300

Sent To:

Greg Denton

TDEC-WPC

6th Floor, L & C Tower Annex

401 Church Street

Nashville, TN 37243-1534

Michael Atchley TDEC-WPC

Knoxville FO

3711 Middlebrook Pike

Knoxville, TN 37921

Lab ID:

K00002955

Knoxville Regional Laboratory

Sampling Agency: TDEC: Division of Water Pollution Control

Billing Code:

327.34-20

This is to certify that the following results were determined using good laboratory pratices and in accordance with federal or state approved methodologies.

K00002955001

Project Name:

TVA-Ash Spill

Sample Description:

Sampler Project Name: TVA Ash Spill

Emory River mile 12.1

Project Site No.:

Station No.:

Date/Time Collected:

EMORY012.1RO 12:20

Sampler's Name:

10/06/2009

County:

Geoff Klein

Sample Matrix:

ROANE - 73 Water

EFO:

Knoxville

Sampling Agency:

TDEC-WPC

Billing Code:

327.34-20

Send Report To:

TDEC-WPC

Agency Invoiced: **Priority Date:**

TDEC-WPC 10/16/2009

Date/Time Received:

10/06/2009

14:00

Received By:

E McCrary

Field Determinations

:Hq

7.80

pH Units

Chlorine, residual:

Conductivity:

43 17.38 **uMHO**

mg/L

Temperature: **Dissolved Oxygen: 9.72**

Other:

Flow:

CFS

TEST: Alkalinity, Total	METHOD: EPA 310.2					
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Total Alkalinity	20	mg/L	3.8	10	S Burchfield	10/9/2009

TEST: Hardness, Calcium	ME.	THOD: SM 350				
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Calcium hardness	21	mg/L	0.7	1	P Leathers	10/12/2009

TEST: Residue, Settleable	ME	THOD: SM 254				
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Settleable Residue	U	ml/L	0.10	0.10	S Burchfield	10/7/2009

TEST: Residue, Suspended METHOD: SM 2540D						
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Total Suspended Solids	U	mg/L	10	10	A Peeples	10/9/2009

J - Estimated value between MDL and MQL

MDL - Method Detection Limit

MQL - Method Quantitation Limit

K00002955002

Project Name:

TVA-Ash Spill

Sample Description:

Emory River mile 2.1

Sampler Project Name: TVA Ash Spill

Project Site No.:

2

Station No.:

EMORY002.1RO

Date/Time Collected:

10/06/2009 10:10

Sampler's Name:

Geoff Klein

County: Sample Matrix: ROANE - 73

Water

EFO:

Knoxville

Sampling Agency: **Billing Code:**

TDEC-WPC

Send Report To:

327.34-20 TDEC-WPC

Agency Invoiced: **Priority Date:**

TDEC-WPC 10/16/2009

Date/Time Received:

10/06/2009

14:00

Received By:

E McCrary

Field Determinations

:Hq

7.96

pH Units

Chlorine, residual:

Conductivity:

62 18.42

uMHO

Temperature:

Dissolved Oxygen: 9.13

mg/L

Other:

Flow:

CFS

TEST: Alkalinity, Total	ME	THOD: EPA 31				
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Total Alkalinity	19	mg/L	3.8	10	S Burchfield	10/9/2009

TEST: Hardness, Calcium	ME.	THOD: SM 350				
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Calcium hardness	20	mg/L	0.7	1	P Leathers	10/12/2009

TEST: Residue, Settleable	ME:	METHOD: SM 2540F				
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Settleable Residue	U	ml/L	0.10	0.10	S Burchfield	10/7/2009

TEST: Residue, Suspended	ME.						
ANALYTE	RESULT UNITS MDL		MDL	MQL	ANALYZED BY:	DATE	
Total Suspended Solids	18	mg/L	10	10	A Peeples	10/9/2009	

J - Estimated value between MDL and MQL

MDL - Method Detection Limit

MQL - Method Quantitation Limit

K00002955003

Project Name:

TVA-Ash Spill

Sample Description:

Sampler Project Name: TVA Ash Spill

Emory River mile 1.9 at underwater weir

Project Site No.:

2B

Station No.:

EMORY001.9RO

Date/Time Collected:

10:30

Sampler's Name:

10/06/2009 Geoff Klein

County:

ROANE - 73

Sample Matrix:

EFO:

Water

Sampling Agency:

Knoxville TDEC-WPC

Billing Code: Send Report To: 327.34-20 TDEC-WPC

Agency Invoiced:

TDEC-WPC

Priority Date: Date/Time Received: 10/16/2009 10/06/2009 14:00

Received By:

E McCrary

Field Determinations

pH:

7.62

pH Units

Chlorine, residual:

Conductivity:

65

uMHO

Temperature:

Dissolved Oxygen: 9.13

18.29

mg/L

Other:

Flow:

CFS

TEST: Alkalinity, Total METHOD: EPA 310.2						
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Total Alkalinity	13	mg/L	3.8	10	S Burchfield	10/9/2009

TEST: Hardness, Calcium	ME.					
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Calcium hardness	20	mg/L	0.7	1	P Leathers	10/12/2009

TEST: Residue, Settleable	ME					
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Settleable Residue	0.1	ml/L	0.10	0.10	S Burchfield	10/7/2009

TEST: Residue, Suspended	Residue, Suspended METHOD: SM 2540D						
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE	
Total Suspended Solids	23	mg/L	10	10	A Peeples	10/9/2009	

J - Estimated value between MDL and MQL

MDL - Method Detection Limit

MQL - Method Quantitation Limit

Date/Time Collected:

K00002955004

Project Name:

TVA-Ash Spill

Sample Description:

Emory River mile 1.9 at underwater weir

Sampler Project Name: TVA Ash Spill

Project Site No.:

2B FD

Station No.:

EMORY001.9RO

Sampler's Name:

10/06/2009 10:30

County:

Geoff Klein **ROANE - 73**

Sample Matrix:

Water

EFO: Sampling Agency: Knoxville

Billing Code:

TDEC-WPC 327.34-20

Send Report To: Agency Invoiced:

TDEC-WPC TDEC-WPC

Priority Date:

10/16/2009

Date/Time Received:

10/06/2009

14:00

Received By:

E McCrary

Field Determinations

:Ha

7.62

pH Units

Chlorine, residual:

Conductivity:

65

uMHO

Temperature:

18.29 **Dissolved Oxygen: 9.13**

mg/L

Other:

Flow:

CFS

TEST: Alkalinity, Total	MET					
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Total Alkalinity	21	mg/L	3.8	10	S Burchfield	10/9/2009

TEST: Hardness, Calcium	ME					
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Calcium hardness	21	mg/L	0.7	1	P Leathers	10/12/2009

TEST: Residue, Settleable	METHOD: SM 2540F						
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE	
Settleable Residue	0.1	ml/L	0.10	0.10	S Burchfield	10/7/2009	

TEST: Residue, Suspended	METHOD: SM 2540D							
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE		
Total Suspended Solids	25	mg/L	10	10	A Peeples	10/9/2009		

J - Estimated value between MDL and MQL

MDL - Method Detection Limit MQL - Method Quantitation Limit

K00002955005

Project Name:

TVA-Ash Spill

Sample Description:

Emory River mile 1.9 at underwater weir

Sampler Project Name: TVA Ash Spill

Project Site No.:

2B FB

Station No.:

EMORY001.9RO

Date/Time Collected:

10/06/2009 10:30

Sampler's Name: County:

Geoff Klein

Sample Matrix:

ROANE - 73

EFO:

Water

Sampling Agency:

Knoxville

Billing Code:

TDEC-WPC

Send Report To:

327.34-20 **TDEC-WPC**

Agency Invoiced: **Priority Date:**

TDEC-WPC 10/16/2009

Date/Time Received:

10/06/2009 14:00

Received By:

E McCrary

Field Determinations

pH:

Chlorine, residual:

Conductivity: Temperature:

Dissolved Oxygen:

Other:

Flow:

CFS

TEST: Alkalinity, Total	ME					
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Total Alkalinity	U	mg/L	3.8	10	S Burchfield	10/9/2009

TEST: Hardness, Calcium	METHOD: SM 3500-Ca D							
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE		
Calcium hardness	U	mg/L	0.7	1	P Leathers	10/12/2009		

TEST: Residue, Suspended	ME.	- 1				
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Total Suspended Solids	U	mg/L	10	10	A Peeples	10/9/2009

J - Estimated value between MDL and MQL

MDL - Method Detection Limit

MQL - Method Quantitation Limit

K00002955006

Project Name:

TVA-Ash Spill

Sample Description:

Sampler Project Name: TVA Ash Spill

Emory River mile 1.7

Project Site No.:

Station No.:

EMORY001.7RO

Date/Time Collected:

10/06/2009 10:45

Sampler's Name:

Geoff Klein

County:

ROANE - 73

Sample Matrix:

Water

EFO:

Knoxville

Sampling Agency: Billing Code:

TDEC-WPC

Send Report To:

327.34-20 TDEC-WPC

Agency Invoiced: **Priority Date:**

TDEC-WPC

Date/Time Received:

10/16/2009

10/06/2009

14:00

Received By:

E McCrary

Field Determinations

pH:

7.42

pH Units

uMHO

Chlorine, residual:

Conductivity:

87

Temperature: **Dissolved Oxygen: 9.07**

18.44

mg/L

Other:

Flow:

CFS

TEST: Alkalinity, Total	EST: Alkalinity, Total METHOD: EPA 310.2						
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE	
Total Alkalinity	28	mg/L	3.8	10	S Burchfield	10/9/2009	

TEST: Hardness, Calcium	METHOD: SM 3500-Ca D					
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Calcium hardness	25	mg/L	0.7	1	P Leathers	10/12/2009

TEST: Residue, Settleable	MET	METHOD: SM 2540F				
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Settleable Residue	U	ml/L	0.10	0.10	S Burchfield	10/7/2009

TEST: Residue, Suspended	ME"					
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Total Suspended Solids	15	mg/L	,10	10	A Peeples	10/9/2009

J - Estimated value between MDL and MQL

MDL - Method Detection Limit

MQL - Method Quantitation Limit

K00002955007

Project Name:

TVA-Ash Spill

Sample Description:

Sampler Project Name: TVA Ash Spill

Emory River mile 0.1

Project Site No.:

Station No.:

EMORY000.1RO

Date/Time Collected:

10:58

Sampler's Name:

10/06/2009 Geoff Klein

County: Sample Matrix: **ROANE - 73**

EFO:

Water

Sampling Agency:

Knoxville

Billing Code:

TDEC-WPC 327.34-20

Send Report To: **Agency Invoiced:**

TDEC-WPC TDEC-WPC

Priority Date:

10/16/2009

Date/Time Received:

10/06/2009

14:00

Received By:

E McCrary

Field Determinations

pH:

7.42

pH Units

Chlorine, residual:

Conductivity:

109

uMHO

Temperature: 18.66

Dissolved Oxygen: 8.14

Other:

Flow:

CFS

mg/L

TEST: Alkalinity, Total METHOD: EPA 310.2						
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Total Alkalinity	86	mg/L	3.8	10	S Burchfield	10/9/2009

TEST: Hardness, Calcium	METHOD: SM 3500-Ca D						
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE	
Calcium hardness	71	mg/L	0.7	1 .	P Leathers	10/12/2009	

TEST: Residue, Settleable	METHOD: SM 2540F					
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Settleable Residue	. U	ml/L	0.10	0.10	S Burchfield	10/7/2009

TEST: Residue, Suspended METHOD: SM 2540D						
ANALYTE	RESULT UNITS MDL		MDL	MQL	ANALYZED BY:	DATE
Total Suspended Solids	U	mg/L	10	10	A Peeples	10/9/2009

J - Estimated value between MDL and MQL

MDL - Method Detection Limit

MQL - Method Quantitation Limit

K00002955008

Project Name:

TVA-Ash Spill

Sample Description:

Sampler Project Name: TVA Ash Spill

Clinch River mile 2.3

Project Site No.:

Station No.:

CLINC002.3RO

Date/Time Collected:

10/06/2009 11:15

Sampler's Name:

Geoff Klein

County: Sample Matrix: ROANE - 73

EFO:

Water

Sampling Agency:

Knoxville

Billing Code:

TDEC-WPC 327.34-20

Send Report To: Agency Invoiced: TDEC-WPC TDEC-WPC

Priority Date:

10/16/2009

Date/Time Received:

10/06/2009

14:00

Received By:

E McCrary

Field Determinations

pH:

7.62

pH Units

uMHO

Chlorine, residual:

Conductivity: Temperature: 213

18.76 Dissolved Oxygen: 7.95

mg/L

Other:

Flow:

CFS

TEST: Alkalinity, Total	ME	METHOD: EPA 310.2				
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Total Alkalinity	93	mg/L	3.8	10	S Burchfield	10/9/2009

TEST: Hardness, Calcium	METHOD: SM 3500-Ca D					
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Calcium hardness	84	mg/L	0.7	1	P Leathers	10/12/2009

TEST: Residue, Settleable METHOD: SM 2540F							
ANALYTE	RESULT	RESULT UNITS MD		MQL	ANALYZED BY:	DATE	
Settleable Residue	U	ml/L	0.10	0.10	S Burchfield	10/7/2009	

TEST: Residue, Suspended	METHOD: SM 2540D					
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Total Suspended Solids	U	mg/L	10	10	A Peeples	10/9/2009

J - Estimated value between MDL and MQL

MDL - Method Detection Limit

MQL - Method Quantitation Limit

K00002955009

Project Name:

TVA-Ash Spill

Sample Description:

Clinch River TVA discharge point

Sampler Project Name: TVA Ash Spill

Project Site No.:

5A

Station No.:

KingAshOutF2

Date/Time Collected:

Sampler's Name:

10/06/2009 11:24 Geoff Klein

County: Sample Matrix: **ROANE - 73**

Water

EFO:

Sampling Agency: **Billing Code:**

Knoxville TDEC-WPC

Send Report To:

327.34-20

Agency Invoiced:

TDEC-WPC TDEC-WPC

Priority Date:

10/16/2009

Date/Time Received:

10/06/2009 14:00

Received By:

E McCrary

Field Determinations

pH:

7.57

pH Units

Chlorine, residual:

Conductivity:

84

uMHO

Temperature:

21.40

Dissolved Oxygen: 9.23

mg/L

Other:

Flow:

CFS

TEST: Alkalinity, Total	ME	METHOD: EPA 310.2				
ANALYTE	RESULT	UNITS MDL		MQL	ANALYZED BY:	DATE
Total Alkalinity	24	mg/L	3.8	10	S Burchfield	10/9/2009

TEST: Hardness, Calcium	METHOD: SM 3500-Ca D						
ANALYTE	RESULT UNITS MDL MQL ANALYZED BY:						
Calcium hardness	29	mg/L	0.7	1	P Leathers	10/12/2009	

TEST: Residue, Settleable	METHOD: SM 2540F						
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE	
Settleable Residue	0.1	ml/L	0.10	0.10	S Burchfield	10/7/2009	

TEST: Residue, Suspended	ME	THOD: SM 2540		***************************************		
ANALYTE	RESULT	UNITS	MDL	MQL ANALYZED	ANALYZED BY:	Y: DATE
Total Suspended Solids	20	mg/L	10	10	A Peeples	10/9/2009

J - Estimated value between MDL and MQL

MDL - Method Detection Limit

MQL - Method Quantitation Limit

K00002955010

Project Name:

TVA-Ash Spill

Field Determinations

pH:

7.47

253

18.11

pH Units

Sample Description: Sampler Project Name: TVA Ash Spill

Clinch River mile 4.5 near Sugar Grove Valley F Chlorine, residual:

Conductivity:

Project Site No.:

CLINC004.5RO

11:40

Temperature:

uMHO

Station No.: **Date/Time Collected:**

Dissolved Oxygen: 763

mg/L

Sampler's Name:

10/06/2009 Geoff Klein

Other: Flow:

CFS

County:

ROANE - 73

Sample Matrix:

Water

EFO:

Knoxville

Sampling Agency: **Billing Code:**

TDEC-WPC 327.34-20

Send Report To: **Agency Invoiced:**

TDEC-WPC TDEC-WPC 10/16/2009

Priority Date:

Date/Time Received:

10/06/2009 14:00

Received By:

E McCrary

TEST: Alkalinity, Total	ME.					
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Total Alkalinity	110	mg/L	3.8	10	S Burchfield	10/9/2009

TEST: Hardness, Calcium	METHOD: SM 3500-Ca D					
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Calcium hardness	91	mg/L	0.7	1	P Leathers	10/12/2009

TEST: Residue, Settleable	METHOD: SM 2540F					
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Settleable Residue	U	ml/L	0.10	0.10	S Burchfield	10/7/2009

TEST: Residue, Suspended	ME					
ANALYTE	RESULT	UNITS	MDL	MQL A	ANALYZED BY:	DATE
Total Suspended Solids	U	mg/L	10	10	A Peeples	10/9/2009

J - Estimated value between MDL and MQL

MDL - Method Detection Limit

MQL - Method Quantitation Limit